

CLAIMS

1. A chip resistor comprising:

5 a resistor element including a first surface and a second surface opposite to the first surface;

at least two main electrodes spaced from each other and provided on the first surface; and

10 at least two auxiliary electrodes spaced from each other and provided on the second surface, the auxiliary electrodes facing the main electrodes via the resistor element;

wherein the main electrodes and the auxiliary electrodes are made of a same material.

15 2. The chip resistor according to claim 1, wherein a spacing distance between the auxiliary electrodes is no smaller than a spacing distance between the main electrodes.

20 3. The chip resistor according to claim 1, further comprising a first insulating layer and a second insulating layer formed on the resistor element, wherein the first insulating layer covers an area between the main electrodes on the first surface of the resistor element, and the second insulating layer covers an area between the auxiliary electrodes on the second surface of the resistor element.

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4. The chip resistor according to claim 3, wherein a thickness of the first insulating layer is no greater than a thickness

of the main electrodes.

5. The chip resistor according to claim 1, further comprising at least two solder layers formed on the resistor element,

5 wherein the resistor element includes a pair of end surfaces spaced from each other, each of the end surfaces being covered by a corresponding one of the two solder layers.

6. The chip resistor according to claim 5, the solder layers
10 cover the main electrodes and the auxiliary electrodes in addition to the end surfaces of the resistor element.

7. The chip resistor according to claim 3, further comprising a third insulating layer formed on the resistor element,
15 wherein the resistor element includes a side surface extending between the first surface and the second surface, the side surface being covered by the third insulating layer.

8. A method of making a chip resistor, the method comprising
20 the steps of:

preparing a resistor material including a first surface and a second surface opposite to the first surface;

forming a pattern of first conductive layer on the first surface;

25 forming a pattern of second conductive layer on the second surface; and

dividing the resistor material into a plurality of

resistor elements;

wherein the first conductive layer and the second conductive layer are made of a same material.

5 9. The method of making chip resistor according to claim 8, wherein the dividing of the resistor material is performed in a manner such that a resulting chip resistor comprises a main electrode made of a part of the first conductive layer and also comprises an auxiliary electrode made of a part of
10 the second conductive layer.

10. The method of making chip resistor according to claim 8, further comprising an additional step, performed before the pattern forming of the first conductive layer, for forming
15 a pattern of a first insulating layer on the first surface of the resistor material and also a pattern of a second insulating layer on the second surface of the resistor material, wherein the first conductive layer and the second conductive layer are formed on areas of the resistor material where the
20 first and the second insulating layers are not formed.

11. The method of making chip resistor according to claim 10, wherein the pattern forming of the insulating layer is formed by thick-film printing.

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12. The method of making chip resistor according to claim 10, wherein the first conductive layer and the second conductive

layer are formed by metal plating.

13. The method of making chip resistor according to claim 8,
wherein the resistor material is divided by punching or by
5 cutting.

14. The method of making a chip resistor according to claim
8, further comprising the steps of: forming an insulating layer
on a side surface of each resistor element; and forming a solder
10 layer on an end surface of the resistor element by
barrel-plating.